<110> Mingdong Zhou

<120> ERBB3 BASED METHODS AND COMPOSITIONS FOR TREATING NEOPLASMS

<130> 52401-20003.00

<140> 10/516,759
<141> 2005-03-26

<150> PCT/CN03/00217
<151> 2003-03-26

<150> CH 02116259.X
<151> 2002-03-26

<160> 16

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 1342
<212> PRT
<213> Homo sapiens

<400> 1

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Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
            20                  25                  30
Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
        35                  40                  45
Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
    50                  55                  60
Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65                  70                  75                  80
Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
                85                  90                  95
Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
            100                 105                 110
Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
        115                 120                 125
His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
    130                 135                 140
```

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Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145                 150                 155                 160
Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
                165                 170                 175
Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys Lys Gly
            180                 185                 190
Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr Leu Thr Lys Thr
            195                 200                 205
Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
        210                 215                 220
Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225                 230                 235                 240
Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
                245                 250                 255
Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
            260                 265                 270
Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
            275                 280                 285
Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser Cys Val Arg Ala
        290                 295                 300
Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305                 310                 315                 320
Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
                325                 330                 335
Gly Ser Arg Phe Gln Thr Val Asp Ser Ser Asn Ile Asp Gly Phe Val
            340                 345                 350
Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
        355                 360                 365
Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
        370                 375                 380
Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr Leu Asn Ile Gln
385                 390                 395                 400
Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
                405                 410                 415
Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
            420                 425                 430
Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
        435                 440                 445
Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg Gln Leu Cys Tyr
        450                 455                 460
His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
465                 470                 475                 480
Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
                485                 490                 495
Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
            500                 505                 510
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```
Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
        515                 520                 525
Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro Arg Glu Phe Ala
        530                 535                 540
His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545                 550                 555                 560
Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr Cys Ala Gln Cys
                565                 570                 575
Ala His Phe Arg Asp Gly Pro His Cys Val Ser Ser Cys Pro His Gly
                580                 585                 590
Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Val Gln Asn
                595                 600                 605
Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
        610                 615                 620
Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu Ile Gly Lys Thr
625                 630                 635                 640
His Leu Thr Met Ala Leu Thr Val Ile Ala Gly Leu Val Val Ile Phe
                645                 650                 655
Met Met Leu Gly Gly Thr Phe Leu Tyr Trp Arg Gly Arg Arg Ile Gln
                660                 665                 670
Asn Lys Arg Ala Met Arg Arg Tyr Leu Glu Arg Gly Glu Ser Ile Glu
        675                 680                 685
Pro Leu Asp Pro Ser Glu Lys Ala Asn Lys Val Leu Ala Arg Ile Phe
    690                 695                 700
Lys Glu Thr Glu Leu Arg Lys Leu Lys Val Leu Gly Ser Gly Val Phe
705                 710                 715                 720
Gly Thr Val His Lys Gly Val Trp Ile Pro Glu Gly Glu Ser Ile Lys
                725                 730                 735
Ile Pro Val Cys Ile Lys Val Ile Glu Asp Lys Ser Gly Arg Gln Ser
                740                 745                 750
Phe Gln Ala Val Thr Asp His Met Leu Ala Ile Gly Ser Leu Asp His
        755                 760                 765
Ala His Ile Val Arg Leu Leu Gly Leu Cys Pro Gly Ser Ser Leu Gln
    770                 775                 780
Leu Val Thr Gln Tyr Leu Pro Leu Gly Ser Leu Leu Asp His Val Arg
785                 790                 795                 800
Gln His Arg Gly Ala Leu Gly Pro Gln Leu Leu Leu Asn Trp Gly Val
                805                 810                 815
Gln Ile Ala Lys Gly Met Tyr Tyr Leu Glu Glu His Gly Met Val His
                820                 825                 830
Arg Asn Leu Ala Ala Arg Asn Val Leu Leu Lys Ser Pro Ser Gln Val
        835                 840                 845
Gln Val Ala Asp Phe Gly Val Ala Asp Leu Leu Pro Pro Asp Asp Lys
    850                 855                 860
Gln Leu Leu Tyr Ser Glu Ala Lys Thr Pro Ile Lys Trp Met Ala Leu
865                 870                 875                 880
```

```
Glu Ser Ile His Phe Gly Lys Tyr Thr His Gln Ser Asp Val Trp Ser
              885                 890                 895
Tyr Gly Val Thr Val Trp Glu Leu Met Thr Phe Gly Ala Glu Pro Tyr
              900                 905                 910
Ala Gly Leu Arg Leu Ala Glu Val Pro Asp Leu Leu Glu Lys Gly Glu
          915                 920                 925
Arg Leu Ala Gln Pro Gln Ile Cys Thr Ile Asp Val Tyr Met Val Met
      930                 935                 940
Val Lys Cys Trp Met Ile Asp Glu Asn Ile Arg Pro Thr Phe Lys Glu
945                 950                 955                 960
Leu Ala Asn Glu Phe Thr Arg Met Ala Arg Asp Pro Pro Arg Tyr Leu
              965                 970                 975
Val Ile Lys Arg Glu Ser Gly Pro Gly Ile Ala Pro Gly Pro Glu Pro
              980                 985                 990
His Gly Leu Thr Asn Lys Lys Leu Glu Glu Val Glu Leu Glu Pro Glu
          995                 1000                1005
Leu Asp Leu Asp Leu Asp Leu Glu Ala Glu Glu Asp Asn Leu Ala Thr
      1010                1015                1020
Thr Thr Leu Gly Ser Ala Leu Ser Leu Pro Val Gly Thr Leu Asn Arg
1025                1030                1035                1040
Pro Arg Gly Ser Gln Ser Leu Leu Ser Pro Ser Ser Gly Tyr Met Pro
              1045                1050                1055
Met Asn Gln Gly Asn Leu Gly Glu Ser Cys Gln Glu Ser Ala Val Ser
              1060                1065                1070
Gly Ser Ser Glu Arg Cys Pro Arg Pro Val Ser Leu His Pro Met Pro
          1075                1080                1085
Arg Gly Cys Leu Ala Ser Glu Ser Ser Glu Gly His Val Thr Gly Ser
      1090                1095                1100
Glu Ala Glu Leu Gln Glu Lys Val Ser Met Cys Arg Ser Arg Ser Arg
1105                1110                1115                1120
Ser Arg Ser Pro Arg Pro Arg Gly Asp Ser Ala Tyr His Ser Gln Arg
              1125                1130                1135
His Ser Leu Leu Thr Pro Val Thr Pro Leu Ser Pro Pro Gly Leu Glu
              1140                1145                1150
Glu Glu Asp Val Asn Gly Tyr Val Met Pro Asp Thr His Leu Lys Gly
          1155                1160                1165
Thr Pro Ser Ser Arg Glu Gly Thr Leu Ser Ser Val Gly Leu Ser Ser
      1170                1175                1180
Val Leu Gly Thr Glu Glu Glu Asp Glu Asp Glu Glu Tyr Glu Tyr Met
1185                1190                1195                1200
Asn Arg Arg Arg Arg His Ser Pro Pro His Pro Pro Arg Pro Ser Ser
              1205                1210                1215
Leu Glu Glu Leu Gly Tyr Glu Tyr Met Asp Val Gly Ser Asp Leu Ser
              1220                1225                1230
Ala Ser Leu Gly Ser Thr Gln Ser Cys Pro Leu His Pro Val Pro Ile
          1235                1240                1245
```

```
Met Pro Thr Ala Gly Thr Thr Pro Asp Glu Asp Tyr Glu Tyr Met Asn
    1250                1255                1260
Arg Gln Arg Asp Gly Gly Gly Pro Gly Gly Asp Tyr Ala Ala Met Gly
1265                1270                1275                1280
Ala Cys Pro Ala Ser Glu Gln Gly Tyr Glu Glu Met Arg Ala Phe Gln
                1285                1290                1295
Gly Pro Gly His Gln Ala Pro His Val His Tyr Ala Arg Leu Lys Thr
                1300                1305                1310
Leu Arg Ser Leu Glu Ala Thr Asp Ser Ala Phe Asp Asn Pro Asp Tyr
                1315                1320                1325
Trp His Ser Arg Leu Phe Pro Lys Ala Asn Ala Gln Arg Thr
    1330                1335                1340
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<210> 2
<211> 640
<212> PRT
<213> Homo sapiens

<400> 2

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Met Arg Ala Asn Asp Ala Leu Gln Val Leu Gly Leu Leu Phe Ser Leu
1               5                   10                  15
Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
            20                  25                  30
Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
            35                  40                  45
Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
    50                  55                  60
Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65                  70                  75                  80
Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
                85                  90                  95
Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
                100                 105                 110
Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
            115                 120                 125
His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
    130                 135                 140
Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145                 150                 155                 160
Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
                165                 170                 175
Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys Lys Gly
            180                 185                 190
Arg Cys Trp Gly Pro Gly Ser Glu Asp Cys Gln Thr Leu Thr Lys Thr
            195                 200                 205
```

Ile Cys Ala Pro Gln Cys Asn Gly His Cys Phe Gly Pro Asn Pro Asn
    210   215   220

Gln Cys Cys His Asp Glu Cys Ala Gly Gly Cys Ser Gly Pro Gln Asp
225   230   235   240

Thr Asp Cys Phe Ala Cys Arg His Phe Asn Asp Ser Gly Ala Cys Val
                245   250   255

Pro Arg Cys Pro Gln Pro Leu Val Tyr Asn Lys Leu Thr Phe Gln Leu
                260   265   270

Glu Pro Asn Pro His Thr Lys Tyr Gln Tyr Gly Gly Val Cys Val Ala
                275   280   285

Ser Cys Pro His Asn Phe Val Val Asp Gln Thr Ser Cys Val Arg Ala
    290   295   300

Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn Gly Leu Lys Met Cys
305   305   310   315

Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys Glu Gly Thr Gly Ser
                320   325   330

Gly Ser Arg Phe Gln Thr Val Asp Ser Ser Asn Ile Asp Gly Phe Val
                335   340   345

Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe Leu Ile Thr Gly Leu
    350   355   360

Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu Asp Pro Glu Lys Leu
    365   370   375

Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly Tyr Leu Asn Ile Gln
380   385   390   400

Ser Trp Pro Pro His Met His Asn Phe Ser Val Phe Ser Asn Leu Thr
                405   410   415

Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly Phe Ser Leu Leu Ile
                420   425   430

Met Lys Asn Leu Asn Val Thr Ser Leu Gly Phe Arg Ser Leu Lys Glu
    435   440   445

Ile Ser Ala Gly Arg Ile Tyr Ile Ser Ala Asn Arg Gln Leu Cys Tyr
    450   455   460

His His Ser Leu Asn Trp Thr Lys Val Leu Arg Gly Pro Thr Glu Glu
465   470   475   480

Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg Asp Cys Val Ala Glu
                485   490   495

Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly Gly Cys Trp Gly Pro
                500   505   510

Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr Ser Arg Gly Gly Val
                515   520   525

Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu Pro Arg Glu Phe Ala
    530   535   540

His Glu Ala Glu Cys Phe Ser Cys His Pro Glu Cys Gln Pro Met Glu
545   550   555   560

Gly Thr Ala Thr Cys Asn Gly Ser Gly Ser Asp Thr Cys Ala Gln Cys
                565   570   575

Ala His Phe Arg Asp Gly Pro His Cys Val Ser Ser Cys Pro His Gly
            580   585   590
Val Leu Gly Ala Lys Gly Pro Ile Tyr Lys Tyr Pro Asp Val Gln Asn
            595   600   605
Glu Cys Arg Pro Cys His Glu Asn Cys Thr Gln Gly Cys Lys Gly Pro
        610   615   620
Glu Leu Gln Asp Cys Leu Gly Gln Thr Leu Val Leu Ile Gly Lys Thr
625   630   635   640

<210> 3
<211> 190
<212> PRT
<213> Homo sapiens

<400> 3
Met Arg Ala Asn Asp Ala Leu Gln Val Leu Gly Leu Leu Phe Ser Leu
1   5   10   15
Ala Arg Gly Ser Glu Val Gly Asn Ser Gln Ala Val Cys Pro Gly Thr
            20   25   30
Leu Asn Gly Leu Ser Val Thr Gly Asp Ala Glu Asn Gln Tyr Gln Thr
            35   40   45
Leu Tyr Lys Leu Tyr Glu Arg Cys Glu Val Val Met Gly Asn Leu Glu
        50   55   60
Ile Val Leu Thr Gly His Asn Ala Asp Leu Ser Phe Leu Gln Trp Ile
65   70   75   80
Arg Glu Val Thr Gly Tyr Val Leu Val Ala Met Asn Glu Phe Ser Thr
            85   90   95
Leu Pro Leu Pro Asn Leu Arg Val Val Arg Gly Thr Gln Val Tyr Asp
            100   105   110
Gly Lys Phe Ala Ile Phe Val Met Leu Asn Tyr Asn Thr Asn Ser Ser
            115   120   125
His Ala Leu Arg Gln Leu Arg Leu Thr Gln Leu Thr Glu Ile Leu Ser
        130   135   140
Gly Gly Val Tyr Ile Glu Lys Asn Asp Lys Leu Cys His Met Asp Thr
145   150   155   160
Ile Asp Trp Arg Asp Ile Val Arg Asp Arg Asp Ala Glu Ile Val Val
            165   170   175
Lys Asp Asn Gly Arg Ser Cys Pro Pro Cys His Glu Val Cys
            180   185   190

<210> 4
<211> 1914
<212> DNA
<213> Homo sapiens

<400> 4

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gctgagaacc  aataccagac  actgtacaag  ctctacgaga  ggtgtgaggt  ggtgatgggg   180
aaccttgaga  ttgtgctcac  gggacacaat  gccgacctct  ccttcctgca  gtggattcga   240
gaagtgacag  gctatgtcct  cgtggccatg  aatgaattct  ctactctacc  attgcccaac   300
ctccgcgtgg  tgcgagggac  ccaggtctac  gatgggaagt  ttgccatctt  cgtcatgttg   360
aactataaca  ccaactccag  ccacgctctg  cgccagctcc  gcttgactca  gctcaccgag   420
attctgtcag  ggggtgttta  tattgagaag  aacgataagc  tttgtcacat  ggacacaatt   480
gactggaggg  acatcgtgag  ggaccgagat  gctgagatag  tggtgaagga  caatggcaga   540
agctgtcccc  cctgtcatga  ggtttgcaag  gggcgatgct  ggggtcctgg  atcagaagac   600
tgccagacat  tgaccaagac  catctgtgct  cctcagtgta  atggtcactg  ctttgggccc   660
aaccccaacc  agtgctgcca  tgatgagtgt  gccgggggct  gctcaggccc  tcaggacaca   720
gactgctttg  cctgccggca  cttcaatgac  agtggagcct  gtgtacctcg  ctgtccacag   780
cctcttgtct  acaacaagct  aactttccag  ctggaaccca  tccccacac   caagtatcag   840
tatggaggag  tttgtgtagc  cagctgtccc  cataactttg  tggtggatca  aacatcctgt   900
gtcagggcct  gtcctcctga  caagatggaa  gtagataaaa  atgggctcaa  gatgtgtgag   960
ccttgtgggg  gactatgtcc  caaagcctgt  gagggaacag  gctctgggag  ccgcttccag  1020
actgtggact  cgagcaacat  tgatggattt  gtgaactgca  ccaagatcct  gggcaacctg  1080
gactttctga  tcaccggcct  caatggagac  ccctggcaca  agatccctgc  cctggaccca  1140
gagaagctca  atgtcttccg  gacagtacgg  gagatcacag  gttacctgaa  catccagtcc  1200
tggccgcccc  acatgcacaa  cttcagtgtt  ttttccaatt  tgacaaccat  tggaggcaga  1260
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ctagacatca  agcataatcg  gccgcgcaga  gactgcgtgg  cagagggcaa  agtgtgtgac  1500
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aattatagcc  gaggaggtgt  ctgtgtgacc  cactgcaact  ttctgaatgg  ggagcctcga  1620
gaatttgccc  atgaggccga  atgcttctcc  tgccacccgg  aatgccaacc  catggagggc  1680
actgccacat  gcaatggctc  gggctctgat  acttgtgctc  aatgtgccca  ttttcgagat  1740
gggccccact  gtgtgagcag  ctgcccccat  ggagtcctag  gtgccaaggg  cccaatctac  1800
aagtacccag  atgttcagaa  tgaatgtcgg  ccctgccatg  agaactgcac  ccagggggtgt  1860
aaaggaccag  agcttcaaga  ctgtttagga  caaacactgg  tgctgatcgg  caaa        1914
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<210> 5
<211> 475
<212> DNA
<213> Homo sapiens

<400> 5

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gatcctgtcc  tgggactctg  aatggcctga  gtgtgaccgg  cgatgctgag  aaccaatacc    60
agacactgta  caagctctac  gagaggtgtg  aggtggtgat  ggggaacctt  gagattgtgc   120
tcacgggaca  caatgccgac  ctctccttcc  tgcagtggat  tcgagaagtg  acaggctatg   180
tcctcgtggc  catgaatgaa  ttctctactc  taccattgcc  caacctccgc  gtggtgcgag   240
ggacccaggt  ctacgatggg  aagtttgcca  tcttcgtcat  gttgaactat  aacaccaact   300
ccagccacgc  tctgcgccag  ctccgcttga  ctcagctcac  cgagattctg  tcaggggggtg   360
```

```
tttatattga gaagaacgat aagctttgtc acatggacac aattgactgg agggacatcg      420
tgagggaccg agatgctgag atagtggtga aggacaatgg cagaagctga ctcga           475


<210> 6
<211> 19
<212> DNA
<213> Artificial Sequence


<220>
<223> Primer


<400> 6
tctgcggagt catgagggc                                                   19


<210> 7
<211> 48
<212> DNA
<213> Artificial Sequence


<220>
<223> Primer


<400> 7
tgtgaccacg actagccgtt tctgatgttc ctgctactgc tgttcact                   48


<210> 8
<211> 25
<212> DNA
<213> Artificial Sequence


<220>
<223> Primer


<400> 8
tctagagatt ttctgcggag tcatg                                            25


<210> 9
<211> 15
<212> DNA
<213> Artificial Sequence


<220>
<223> Primer


<400> 9
gacgacgacg acaag                                                       15
```

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<210> 10
<211> 16
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 10
gccatggctg atatcg                                              16


<210> 11
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 11
gcaccaccac caccaccact gag                                      23


<210> 12
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 12
acatcaagca taatcggcc                                           19


<210> 13
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 13
aggctcccca ttcagaaag                                           19
```

<210> 14
<211> 82
<212> PRT
<213> Homo sapiens

<400> 14
Arg Gln Leu Cys Tyr His His Ser Leu Asn Trp Thr Lys Val Leu Arg
1   5   10   15
Gly Pro Thr Glu Glu Arg Leu Asp Ile Lys His Asn Arg Pro Arg Arg
                20   25   30
Asp Cys Val Ala Glu Gly Lys Val Cys Asp Pro Leu Cys Ser Ser Gly
        35   40   45
Gly Cys Trp Gly Pro Gly Pro Gly Gln Cys Leu Ser Cys Arg Asn Tyr
    50   55   60
Ser Arg Gly Gly Val Cys Val Thr His Cys Asn Phe Leu Asn Gly Glu
65   70   75   80
Pro Arg

<210> 15
<211> 456
<212> DNA
<213> Homo sapiens

<400> 15
atggtttgtg tagccagctg tccccataac tttgtggtgg atcaaacatc ctgtgtcagg   60
gcctgtcctc ctgacaagat ggaagtagat aaaaatgggc tcaagatgtg tgagccttgt   120
gggggactat gtcccaaagc ctgtgaggga acaggctctg ggagccgctt ccagactgtg   180
gactcgagca acattgatgg atttgtgaac tgcaccaaga tcctgggcaa cctggacttt   240
ctgatcaccg gcctcaatgg agacccctgg cacaagatcc ctgccctgga cccagagaag   300
ctcaatgtct tccggacagt acgggagatc acaggttacc tgaacatcca gtcctggccg   360
ccccacatgc acaacttcag tgttttttcc aatttgacaa ccattggagg cagaaagctt   420
gcggccgcac tcgagcacca ccaccaccac cactga   456

<210> 16
<211> 148
<212> PRT
<213> Homo sapiens

<400> 16
Met Val Cys Val Ala Ser Cys Pro His Asn Phe Val Val Asp Gln Thr
1   5   10   15
Ser Cys Val Arg Ala Cys Pro Pro Asp Lys Met Glu Val Asp Lys Asn
                20   25   30
Gly Leu Lys Met Cys Glu Pro Cys Gly Gly Leu Cys Pro Lys Ala Cys
        35   40   45

```
Glu Gly Thr Gly Ser Gly Ser Arg Phe Gln Thr Val Asp Ser Ser Asn
     50                      55                  60
Ile Asp Gly Phe Val Asn Cys Thr Lys Ile Leu Gly Asn Leu Asp Phe
65                       70                  75                  80
Leu Ile Thr Gly Leu Asn Gly Asp Pro Trp His Lys Ile Pro Ala Leu
                     85          90                  95
Asp Pro Glu Lys Leu Asn Val Phe Arg Thr Val Arg Glu Ile Thr Gly
                100              105             110
Tyr Leu Asn Ile Gln Ser Trp Pro Pro His Met His Asn Phe Ser Val
             115              120              125
Phe Ser Asn Leu Thr Thr Ile Gly Gly Arg Ser Leu Tyr Asn Arg Gly
     130              135                  140
Phe Ser Leu Leu
145
```